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(FILE 'HOME' ENTERED AT 15:46:56 ON 02 JUN 2005)

FILE 'CAPLUS' ENTERED AT 15:47:02 ON 02 JUN 2005

L1 164806 S OLEFIN?
L2 8250 S HYDROFORMYLAT? OR OXO REACTION OR OXO SYNTHESIS
L3 2542 S L1 AND L2
L4 1370 S L3 AND ?ALDEHYDE?
L5 695 S L4 AND RHODIUM?
L6 371 S L5 AND ?PHOSPHINE
L7 58 S L6 AND CARBONYL
L8 8277 S ALDOL CONDENSATION
L9 1 S L7 AND L8
L10 124 S L2 AND L8
L11 3 S L10 AND MANNICH REACTION
L12 519543 S ETHENE OR ETHYLENE
L13 698 S L12 AND HYDROFORMYLAT?
L14 17 S L13 AND (?ADOL CONDENSATION OR ?COUPLING?)
L15 2 S L14 AND (?AMINE OR PYRIDINE OR MORPHOLINE OR PYROLIDINE OR P
L16 2 S L14 AND ?FORMALDEHYDE
L17 0 S L14 AND ?ACROLEIN
L18 20118 S ?ACROLEIN
L19 285 S L18 AND ALDOL CONDENSATION
L20 57 S L19 AND ?FORMALDEHYDE
L21 14 S L20 AND (PROPANAL OR PROPIONALDEHYDE OR PROPYL ALDEHYDE)
L22 1 S L21 AND (DUAL PHAS? OR BIPHAS?)

WEST Search History

DATE: Thursday, June 02, 2005

Hide? Set Name Query**Hit Count***DB=PGPB,USPT; PLUR=YES; OP=ADJ*

<input type="checkbox"/>	L6	14 and (amine or pyridine or morpholine or piperazine or pyrrolidine)	10
<input type="checkbox"/>	L5	14 and mannich reaction	0
<input type="checkbox"/>	L4	13 and \$formaldehyde	20
<input type="checkbox"/>	L3	12 and aldol condensation	56
<input type="checkbox"/>	L2	11 and hydroformylat\$	309
<input type="checkbox"/>	L1	\$acrolein	11791

END OF SEARCH HISTORY

L21 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN

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DOCUMENT NUMBER: 140:376992

TITLE: Biphasic catalysis for a selective oxo-Mannich tandem synthesis of **methacrolein**

AUTHOR(S): Deshpande, R. M.; Diwakar, M. M.; Mahajan, A. N.; Chaudhari, R. V.

CORPORATE SOURCE: Homogeneous Catalysis Division, National Chemical Laboratory, Pune, 411008, India

SOURCE: Journal of Molecular Catalysis A: Chemical (2004), 211(1-2), 49-53

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AB A biphasic approach is proposed for the tandem synthesis of **methacrolein** from ethylene via hydroformylation and subsequent aldol reaction with **formaldehyde**. The two catalysts used, one for hydroformylation of ethylene to **propionaldehyde** and the other for the **aldol condensation** of **propionaldehyde** with **formaldehyde** are incompatible with each other. The Rh-complex (hydroformylation catalyst) deactivates the aldolization catalyst in the initial phase of the reaction, and thus inhibits the **aldol condensation** reaction. A strategy of segregation of these two incompatible catalysts in two sep. phases was used, which prevents the deactivation of the aldolization catalyst, resulting in an active and stable catalyst package for the tandem synthesis of **methacrolein** with high selectivity (.apprx.95%). The **aldol condensation** catalysts evaluated include water soluble NaOH, diethylamine, triethylamine, and triphenylphosphine in mixts. with acetic acid. This catalyst package was recycled for five times without any loss in activity or selectivity.